SMELYANSKIY, Matvey Yakovlevich; GUTERMAN, Kirill Davydovich;
BOYARSHINOV, V.A., kand. tekhn.nauk, retsenzent; TKACHEV,
L.G., inzh., red.; YEMZHIN, V.V., tekhn. red.

[Design and operation of vacuum arc furnaces]Rabochii protsess
i raschet vakuumnykh dugovykh pechei. Moskva, Gosenergoizdat,
1962. 111 p. (Biblioteka elektrotermista, no.12)

(MIRA 15:11)

(Electric furnaces--Design and construction)
(Vacuum metallurgy)

SMELYANSKIY, Matvey Yakovlevich, BOYARSHINGV, Vladimir Arkad'yevich; GUTERMAN, Kirill Davidovich; TKACHEV, Leonid Grigor'yevich; TSISHEVSKIY, Vsevolod Petrovich; YEZDOKOVA, M.L., red. izdva; ISLENT'YEVA, P.G., tekhn. red.

> [Vacuum arc furnaces and electronic melting plants]Dugovye vakuumnye pechi i elektronnye plavil'nye ustanovki. Moskva, Metallurgizdat, 1962, 210 p.
> /Slectric furnaces) (Vacuum metallurgy) (MIRA 16:2)

(Electronic apparatus and appliances)

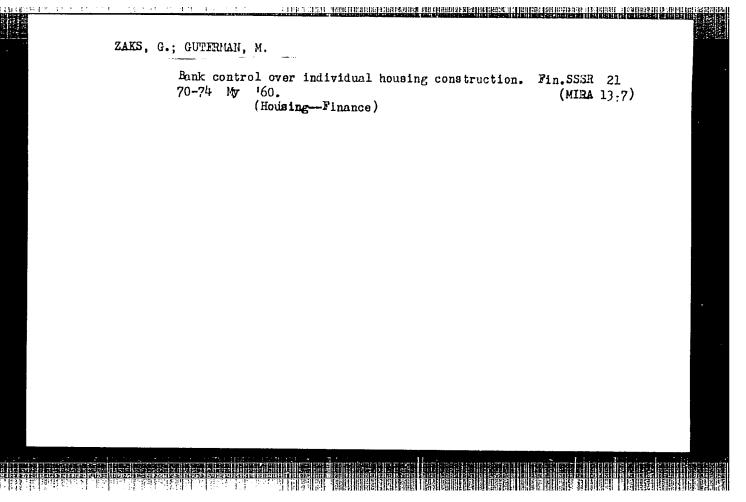
CIA-RDP86-00513R000617630003-5" APPROVED FOR RELEASE: 09/19/2001

GUTERMAN, M.

"The main problems in the rough cutting of lumber in sawmills", p. 101 (Analela Romano-Sovietice. Seria Silvicultura-Industria Lemmului Si A Hartiel., Series a II-a, v. 7.

no. 15, Sept/Oct. 1952 Bucuresti)

So: Monthly List of America Accessions, Library of Congress, September 1953, Uncl.



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GUTERMAN, M. B., and LOZINSKIY, M. G.

"High Heat Stable Indentors for Measuring the Hardness of Metals When Heated to 1,300° in a Vacuum," by M. G. Lozinskiy and M. B. Guterman, Institute of Machine Science, Academy of Sciences USSR, Zavodskaya Laboratoriya, Vol 22, No 11, 1956, pp 1358-1363

Present methods used in measuring the hardness of metals and alloys are based on indentation. For extending the temperature range of the tests and increasing the longevity of the indentor tips it was necessary to find new materials capable of replacing the technical diamonds being used. As the result of many comparative tests, synthetic corundum (artificial sapphire) tips were found to be most suitable for measuring alloy hardness at temperatures up to 1,300°, under vacuum.

Schematic drawings of a diamond-tipped indentor and a sapphiretipped indentor used in the tests are shown. Photomicrographs of the imprints of both type tips on test metals supplement the text.

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CateRMAK, M. B

24-9-7/33

AUTHORS: Antipova, Ye. I., Guterman, M. B. and Lozinskiy, M. G.

(Moscow)

TITLE: Certain features of polymorphous  $\beta$  to  $\alpha$  transformation of

pure (iodide) titanium. (Nekotoryye osobennosti

polimorfnogo β-λα-prevrashcheniya chistogo (iodidnogo)

titana).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.9, pp.45-49 + 6 plates (USSR)

ABSTRACT: Until very recently very little information has been published on direct observations of the polymorphous transformation of titanium and no detailed information was available on the kinetics of this process, the exception being a paper by Lozinskiy, M.G. (Ref.7). Such direct observations at elevated temperatures can only be carried out by heating in vacuum with a residual pressure of 10-5 to 10-6 mm Hg (Ref.8). In this paper the experiments are described which were carried out by the authors at the Institute of Mechanical Engineering, Ac.Sc. USSR (Institut Mashinovedeniya AN SSSR) on titanium containing various small additions of iron, silicon, aluminium and carbon, as specified in the table, p.45. The experiments

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Certain features of polymorphous  $\beta$  to  $\alpha$  transformation of pure (iodide) titanium.

were carried out by means of methods and equipment described in the book "High Temperature Metallography" of Lozinskiy, M.G. and also by means of dilatometric tests in the temperature range from room temperature up to 1000 C. Titanium specimens of 6 x 2 x 60 mm were used, whereby the metallographic cut was made at the 60 x 6 mm surface. The graph, Fig.1, p.46, shows dilatometric curves for temperatures up to 1000°C and these show that a to β transformation starts at about 860 to 880° that  $\beta$  to  $\alpha$  transformation proceeds at 900 to 880°C. Fig. 2 shows a series of micro-photographs taken from the same surface of a specimen during heating for twenty minutes at 1050°C at a vacuum of 10 5 mm Hg. Fig. 3 shows a series of micro-photographs of a specimen surface during \$\beta\$ to a transformations in vacuum. Fig.4 shows a micro-photo of a "plane" crystal of a-titanium forming in the process of polymorphous transformation when investigating the micro-structure in vacuum; Fig.5 shows a microphoto of a "plane" a-titanium crystal subjected to β to a transformation during cooling in vacuum. Fig.6 shows a martensite-like micro-relief during β to α transformation

Card 2/3

24-9-7/33 Certain features of polymorphous  $\beta$  to  $\alpha$  transformation of pure (iodide) titanium.

> on a polished surface of a titanium specimen, whilst Fig. 7 shows a micro-photo of a zone of coexistence of the original micro-structure of the iodide titenium specimen and of the micro-relief forming as a result of  $\beta$  to  $\alpha$ transformation. By means of high temperature metallography methods, the different kinetics of growth have been elucidated of a-titanium crystals during polymorphous  $\beta$  to  $\alpha$  transformation. It was established that the time of formation and growth of a-titanium crystals until reaching their final dimensions may exceed 1/16 sec and may also continue at a rate of 0.8-1.20/sec. In individual cases an additional growth of the  $\alpha$ -titanium crystals with an average rate of 0.06 to 0.08 /sec was observed during the polymorphous transformation. The here described schemes illustrate the causes of observation of differing kinetics of growth on the a-titanium grains observed on the specimen surfaces.

There are 9 figures, 1 table and 9 references, 6 of which are Slavic.

SUBMITTED: May 24, 1957. AVAILABLE: Library of Congress.

Card 3/3

GUTERMAN, M.B.

AUTHORS: Guterman, M.B., Dron', N.A., Lozinskiy, M.G., and Teumin, M. I. (Moscow).

Simultaneous application of X-ray and micro-structural TITLE:

analyses for studying the processes of deformation in heated metals and alloys. (Odnovremennoye primeneniye rentgeno- i mikrostrukturnogo analizov dlya izucheniya protsessov deformatsii nagretykh metallov i splavov).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, No.1, pp. 11-20 + 2 plates (USSR)

ABSTRACT: In studying the kinetics of the process of deformation of metals and alloys within a wide range of temperatures

and deformation speeds it is of great scientific and practical interest to investigate simultaneously the changes in the micro-structure of the material and the distortions of the crystal lattice caused by stresses of the first and second type by using X-ray methods.

Apparatus developed by the Institute of Engineering Technology,

(Institut Mashinovedeniya AN SSSR) and AS USSR

described in earlier papers (Refs. 13) enables observation directly under a microscope and on photographs of the microstructure of metals and alloys during the process of Card 1/5 heating up to 1100°C applying simultaneously tensile

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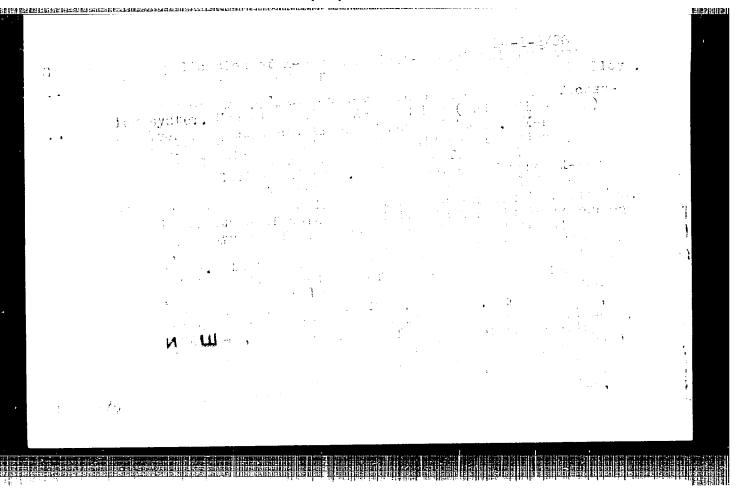
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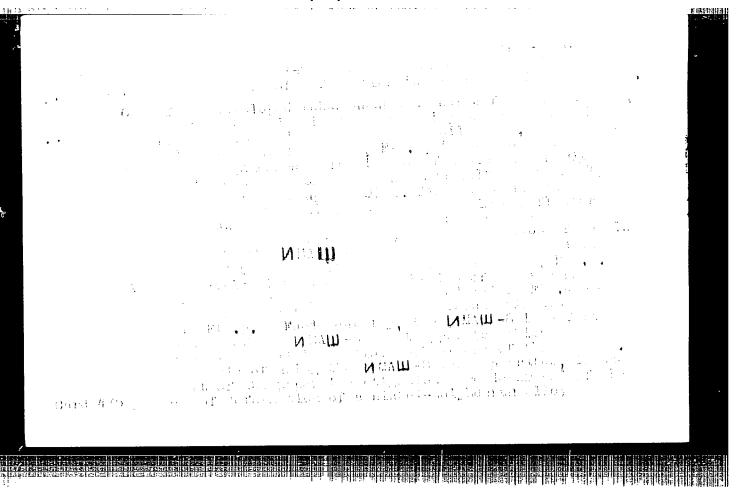
24-1-2/26 Simultaneous application of X-ray and micro-structural analyses for studying the processes of deformation in heated metals and alloys.

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stresses of 0 to 60 kg/mm<sup>2</sup>. Observation of the microstructure during tensile stresses permits only seeing the results of sliding processes and of viscous displacement along the boundaries of the grains and the blocks. The micro-relief forming thereby on the poliched surface of the specimen reflects the occurring changes in the micro-structure. It is particularly important to emphasize that these changes are due to processes which in most cases are irreversible and take place in volumes of the order of one or several grains. Processes preceding deformation cannot be investigated by microstructural analysis but only by X-ray structural analysis, namely, by measuring the period of the crystal lattice for determining the magnitude of the internal stresses of the first type (elastic as well as residual) and also for determining the distortions in the crystal lattice caused by type II stresses. For obtaining a clear picture characterizing the stress state on the basis of X-ray diffraction patterns from individual crystallites, it is necessary to use a sharp X-ray bean. This can be

Card 2/5 obtained either by means of a diaphragm with a small





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24-1-2/26 Simultaneous application of X-ray and micro-structural analyses for studying the processes of deformation in heated metals and olloys.

containing 7% Mo at 600°C in vacuum. The results of these investigations are graphed in Fig.7. Micro-photographs and X-ray diffraction patterns produced during these enteriments are shown in Figs.8 and 9. The simultaneous X-ray structural and micro-structural investigations of the process of deformation of heated materials with the here described equipment using the new, sharp beam X-ray tubes (which permit reducing the exposure these to 1.5 to 2 minutes) opens up extensive possibility of studying the relations governing the softening of metals and alloys. There are 9 figures and 4 references, all of which are Russian.

SUEMITTED: August 26, 1957.

ASSOCIATION: Institute of Engineering Technology, Ac.Sc. USSR.

(Institut Mashinovedeniya AN SSSR).

AVAILABLE: Library of Congress.

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SOV-129-58-6-2/17

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AUTHORS: Lozinskiy, M. G. (Dr.of. Tech. Sci.), Guterman, M.B. and Antipova, Ye. I. (Engineers)

TITLE: Micro Nonuniformity of Deformation of Metals during High Temperature Heating (Mikroneodnorodnost' deformatsii metallov pri vysokotemperaturnom nagreve)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 6, pp 6-9 and 4 plates (USSR)

ABSTRACT: Oding and Ivanova (Ref.1) have shown that in the volume of specimens subjected to tension at room temperature and at elevated temperature the speed of expansion differs in the individual local sections of sizes of about 10 mm.

In this paper information is given on the relations governing the kinetics of nonuniform deformation in the micro volumes at temperatures above and below the equicohesion temperature, i.e. under regimes at which the grain boundaries are respectively weaker or stronger than the body of the grain. The experiments were effected on equipment developed by the Institute of Machinery, Academy of Sciences, USSR. A valuable feature of this equipment is the possibility of direct observation under the microscope and photographing of the micro structure of the surface of the Card 1/4

307-129-58-6-2/17

Micro Nonuniformity of Deformation of Metals during High Temperature Heating.

studied specimens when heating up to  $1100^{\circ}$ C during the process of deformation under tension in vacuum. For measuring the micro hardness a series of indentations by a diamond pyramid were made in the longitudinal direction of the specimen with spacings of about 0.05 to 0.1 mm; these indentations were viewed with a microscope with a magnification of 200 times. During the tests one and the same section of the surface of the specimens was continuously observed and photographed and the produced series of micro photographs permits comparison of the nonuniformity of the deformation and of the individual micro volumes of the specimen. The accuracy of measurement was 0.05%. Figs.2 and 3 (plates) show two series of micro photographs made of the same section of the surface of annealed specimens of a single phase nickel-molybdenum alloy, with 7% Mo, during heating and tensile stressing in a vacuum of about 10-5 mm Hg col. In Fig.4 the deformation is graphed of the

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307-129-58-6-2/17

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Micro Nonuniformity of Deformation of Metals during High Temperature Heating.

individual micro sections and of the entire zone during the tests of the specimens, the micro photographs of which are shown in Fig.2. In Fig.5 the deformation curves are graphed micro sections and of the entire zone during testing of a specimen, micro photographs of which are given in Fig. 3. Fig.6 shows the micro structure of a specimen of a homogenized ageing alloy of iron with 12 wt.% Mo after being subjected to tensile stresses of 40 kg/mm<sup>2</sup> at 450°C for 2 hours. In Fig.7 the relative changes of the dimensions of the diagonals of the square indentations (shown in Fig.2), by the diamond pyramid, on the specimen surface are graphed. Fig.8 shows the micro structure of the surface of a specimen of Fe-Mo alloy (12 wt % Mo) after being subjected to a tensile stress of 40 kg/mm<sup>2</sup> at 450°C for 2 hours in vacuum. The here described experimental results have enabled for the first time the recording of the kinetics of the nonuniform process of deformation in micro volumes in a wide temperature range by direct observation. Thereby the nonuniformity observed earlier in relatively larger volumes of lengths of 1 - 10 mm (Ref.1), was considerably more Card 3/4 pronounced in sections of dimensions from 50 μ onwards.

CIA-RDP86-00513R000617630003-5" APPROVED FOR RELEASE: 09/19/2001

SOV-129-58-6-2/17

Micro Nonuniformity of Deformation of Metals during High Temperature Heating.

> Furthermore, within a single grain, the magnitude of deformation evaluated by distortion of the indentations on the specimen and the change in the specimes of these indentations varies very considerably. There are 8 figures (4 of them plates) and 5 references, of which 4 are Soviet and I English.

ASSOCIATION: Institut Mashinovedeniya AN SSSR (Institute of Machinery, Academy of Sciences USSR)

- 1. Metals Deformation 2. Metals - Temperature effects
- 3. Metals Test methods

Card 4/4

GORELIK, S.S., dots., kand. tekan. nauk; GUTERMAN, H.B., insh.

Mechanism of recrystallization during the critical stage of deformation. Sbor. Inst. stali no.38:536-547 '58. (MIRA 11:8)

1. Kafedra metallofiziki i rentgenografii Moskovskogo instituta stali im. Stalina.

(Grystallization) (Deformations (Mechanics))

L 14998-66 EWT(m)/EWP(w)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(h) ACC NR: AP5028563 IJP(c) JD/HW/JG SOURCE CODE: UR/0126/65/020/005/0733/07 AUTHOR: Guterman, M. B.; Mirkin, I. L.; Pavlyuk, A. A.; Pervakov, V. A.; Petrenko, ORG: TsNII of Technology and Machine Building, Moscow (TsNII tekhnologii i mashinostroyeniya); Kharkov gosuniversitet im. A. M. Gor'kiy (Khar'kovskiy gosuniversitet) TITLE: Certain features connected with the K-state in Ni-Cr, Ni-Cr-Mo and Fe-Ni-SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 5, 1965, 733-740 TOPIC TAGS: metal physics, ordered alloy, mechanical property, resistivity, nonferrous metal alloy, ferrous alloy, metal heat treatment, heat resistant alloy, high temperature strength, metal hardening ABSTRACT: Changes in electrical resistivity in Ni + 15% Cr, Ni + 15% Cr + 18% Mo and Fe + 25% Ni + 16% Cr + 6% Mo alloys were studied as a function of low temperature/deformation (from +20° to -196°C) and annealing rate (from 2 to 10<sup>5</sup> deg/min). Decomposition of the K-state in the alloys was observed. The effect of the K-state on high temperature strength was also noted. The K-state causes microscopic inho-UDC: 539.4.015 2

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mogeneities which retard the motion of dislocations. In this work, the influence of the decomposition of the K-state was studied in terms of high temperature strength. The temperature dependence of electrical resistivity was obtained as a function of temperature and heating rate. For each alloy, the resistivity increased initially and at 500°C reached a peak, whereupon it dropped to a minimum (about 700° to 900°C depending on the alloy) and rose again. The drop in resistivity was associated with the decomposition of the K-state. Deformation by compression (60 to 70%) in the temperature interval from -196 to +20°C showed that the decomposition of the K-state was practically independent of deformation temperature. At higher temperatures (between 500° and 1000°C) and at high rates of heating, the decomposition of the K-state was studied by increasing the heating rate to 10 deg/min. The interval for the maximum decomposition was displaced to higher temperatures (300 to 450° higher), depending on the type of alloy. In the K-state region a significant strengthening was also noted when the speed of deformation was increased from 0.03%/min to 0.3%/min, while in the region of K-state decomposition no effect on strength was apparent. For fast heating rates, the rise in strength was maintained at higher temperatures than for slow heating rates. In particular, for Ni-Cr this region was expanded to 700°C, while for the other alloys to 900 or 1000°C. Where the K-state was decomposed at room temperature, no additional strengthening occurred upon pulse heating. Orig. art. has: 4 figures. OTH REF: ORIG REF: 011/ SUBM DATE: 06Aug64/ SUB CODE: 11/

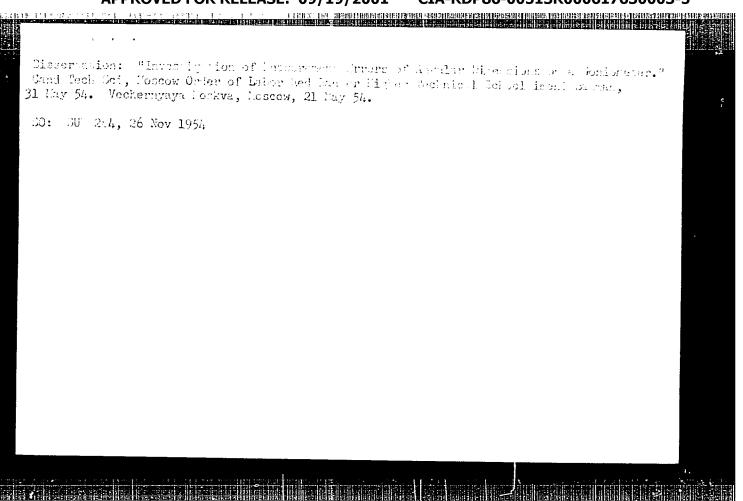
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#### "APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R000617630003-5 GUTERMAN, M.C. Amalgam relatography. Study of the influence of gelatinand camphor on the anodic waves of amalgams. A. G. Stromberg and M. S. Guferman (A. M. Gor'kji Uraf State Univ., Syerdlovski). Zhur. Fiz. Khim. 27, 993-1091(1953); Cl. C.A. 47, 11032b.—In amalgam polarography, the dropping liquid was a dil. amalgam of metal, M, and the aq. soln. in which the drops formed usually contained no ions of M. The potentials (E, and E,) of the half waves and the soln. In which the drops formed usually contained no ions of M. The potentials (\$E\_a\$ and \$E\_t\$) of the half waves and the coeffis. \$k\_a\$ and \$k\_t\$ of the equation log \$[i/(I-i)]\$] = const. \$kE\$ (i = current strength, \$I = limiting current strength, \$E = drop potential referred to satd. If \$I\_t = I\_t = I\_

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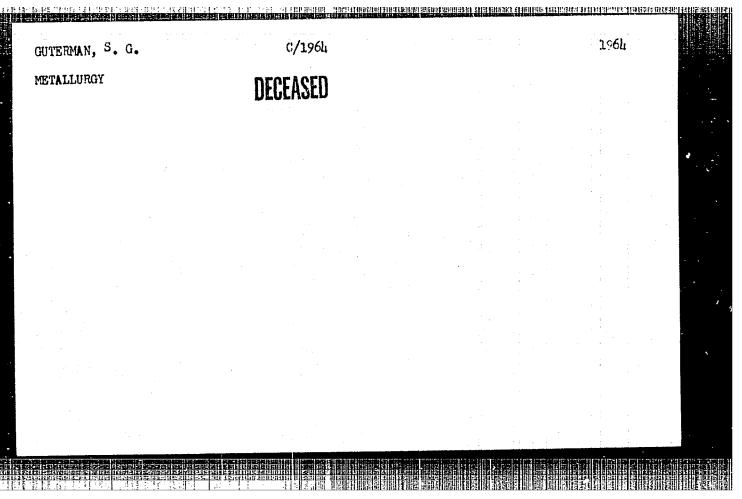


GUTERMAN, S.A.; BAYKHRAUM, Ya.D.

Using radioactive indicators for the investigation of spark discharges. Fiz.sbor. no.4:250-252 '58. (MIRA 12:5)

1. Irkutskiy nauchno-issledovatel'skiy institut Ministerstva tavetnoy metallurgii.

(Electric sparks) (Radioactive tracers)



ACC NR: AP7001849 SOURCE CODE: UR/0021/66/000/012/1584/1587

AUTHOR: Huterman, V. H.--Guterman, V. G.

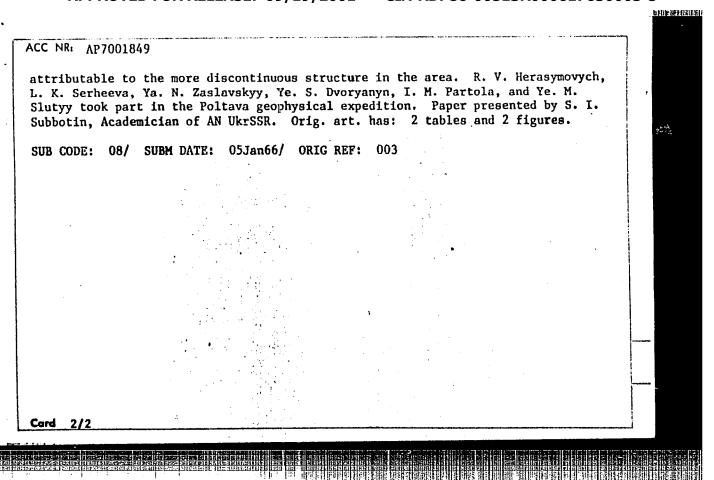
ORG: Institute of Geophysics, AN UkrSSR (Instytut geofizyky AN URSR)

TITLE: Fault zone influence on the value of elastic wave velocity

SOURCE: AN UkrSSR. Dopovidi, no. 12, 1966, 1584-1587

TOPIC TAGS: elastic wave, seismic sounding, geologic expedition, wave propagation

ABSTRACT: This paper shows that an anomalously low value of the velocity of longitudinal elastic waves is observed in the fault zone. Within the Rybaltsivs'kyy brachy-anticlinal fold (Dneprovsk-Donets depression) seismic logging has been conducted in six deep exploration holes. Analysis of longitudinal wave propagation in Upper Cretaceous deposits showed that in the structure under study the law of stratum velocity distribution established in a previous paper is observed, i.e., in closed structures these velocities are minimum and increase toward the periphery of the fold. There was an exception in certain Cretaceous deposits in a single borehole. These were Santonian-Turonian deposits. The paper discusses the anomalously low values here. It must be taken into account that the fault in these deposits in one of the boreholes is so close to the borehole with the low value that it affects the readings from the second hole. Elastic waves in general are smaller in this area and in similar ones. Dynamic loads which were generated in tectogenesis are not taken into consideration in their effect on the anomalous readings which seem to be Cord 1/2



GUTERNAN, V.A. Relation between the loyer velocities and the sectionies of two anticline seruntures in the Onisper-Donats Lowland. George. abor. no.8:63.68 164. (MIRA 18:6) l. Inabitus geoffaiks AN UkrOSA. 

GUTERMAN, V. M., Engr. Cand. Tech. Sci.

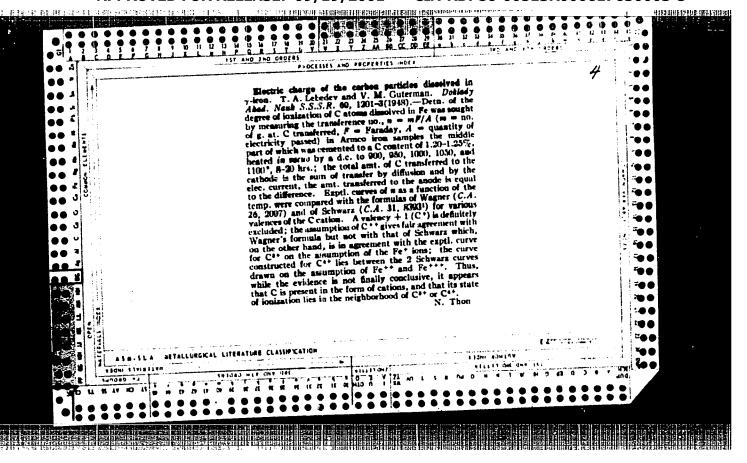
Dissertation: "Electrolysis of the Solid Solution of Carbon in Iron." Central Sci Res
Inst of Technology and Machine Building - "TsNIITMASh." 23 Jun 47.

SO: Vechernyaya Moskva, Jun, 1947 (Project #17836)

GUTLIGAN, V. M.
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Elektroliz Austenita. V sb: Korroziya, zashchita ot korrozii i elektroliz.
M., 1948, s. 156-72.--Bibliogr: 5 Nazv.

So: LETOPIS NO. 30, 1946



GUTERMAN, V.M., kandidat tekhnicheskikh nauk; TENENHAUM, M.M., kandidat tekhnicheskikh nauk.

Correlation between microstructure and wear resistance of carbon steels during abrasive tests. Metalloved. i obr. met. no.11:15-23 N '56. (MLRA 10:1)

1. Vsesoyuznyy proyektno-tekhnologicheskiy i eksperimental'nyy institut ugol'nogo mashinostroyeniya.

(Steel alloys--Testing)

TENERBAUM, M.M., kandidat tekhnicheskikh nauk; GUTRMAN, V.M., kandidat tekhnicheskikh nauk.

Investigating the wear resistance of steel in abrasive media.
Vest.mash. 36 no.12:25-29 D \*56.

1. Vsesoyuznyy projektno-tekhnologicheskiy i eksperimental nyy institut ugol'nogo mashinostroyeniya.
(Tool steel--Testing)

(Machanical wear)

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#### CIA-RDP86-00513R000617630003-5 "APPROVED FOR RELEASE: 09/19/2001

AUTHOR:

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32-6-22/54

TITLE:

Short Reports. (Korotkiye soobshcheniya, Russian) Zavodskaya Laboratoriya, 1957, Vol 23, Nr 6, pp 706

PERIODICAL: (U.S.S.R.)

ABSTRACT:

V.M.GUTERMANN and V.B.MIKHIYENKO set up the following scale of microstructures for the control of the quality of the cemented layer of the following types of steel: 20kh, 12khN3A, 12kh2N4A, 18khGT and 20khGB according to various methods of technical treatment. The microstructure of the cemented layer is here compared with the mechanical qualities of the samples.

D.G.ZAYTSEV worked out a method for sorting out types of steel according to the amount of their thermoelectric driving force and in consideration of the C and Si content in the steel. A steel plate of 0,5 mm thickness is used as standard, and borings served as samples. On the basis of the results obtained by investigations the author expresses the opinion that purely bimetallic alloys represent a linear ratio between thermoelectric driving

forces and the proportion of the alloy.

ASSSOCIATION: Institute "Orguglyemash" and Turbine Factory of Kaluga.

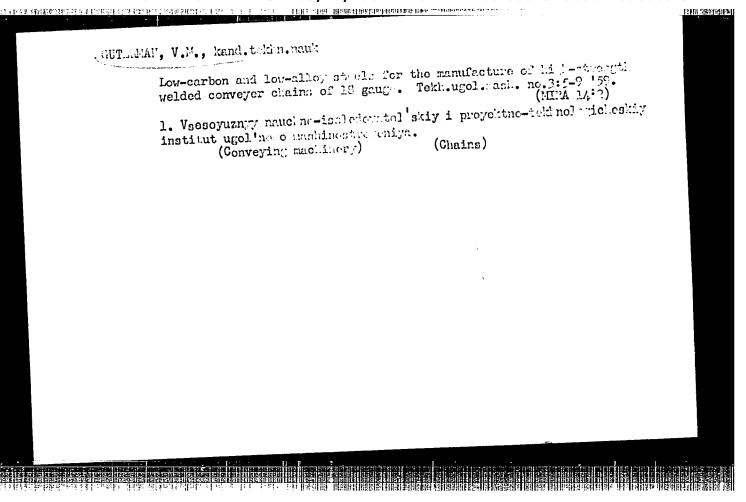
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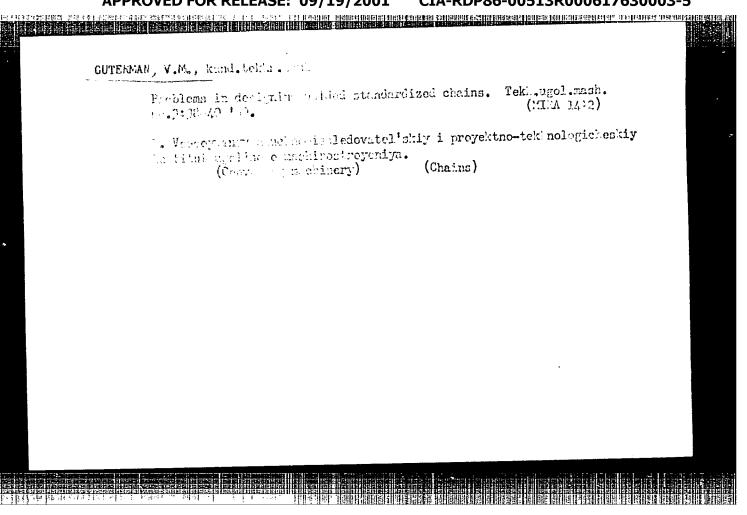
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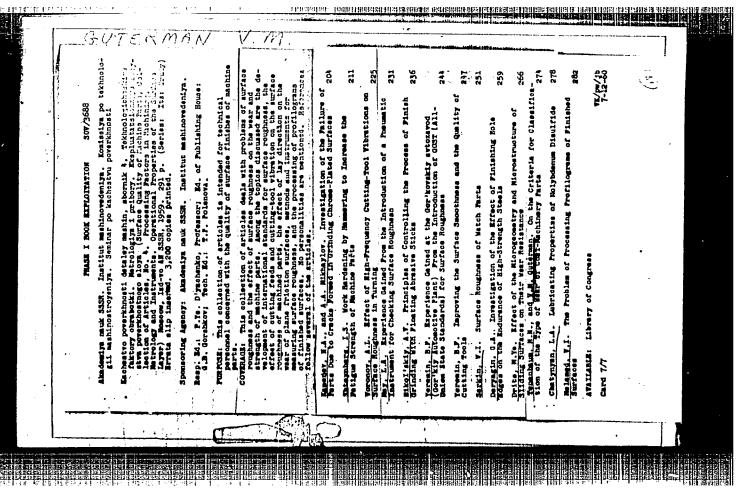
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S/191/60/000/004/012/015 B016/B058

AUTHORS:

Guterman, V. M., Kogan, A. M., Kotina, M. M.

TITLE:

Application of Microstructural Analysis for Studying Glass-

reinforced Plastics

PERIODICAL:

Plasticheskiye massy, 1960, No. 4, pp. 58-66

TEXT: The authors report on their studies which were intended to clarify the applicability of microstructural analysis for testing glass-reinforced plastics (grp). The determination of the structure of this material is of importance for a random quality control of the finished products, for developing new types of grp, and for the improvement of their manufacturing methods. Studies conducted at the Department of Polymer Substances of the VNIIPTUglemash (All-Union Scientific Research, Design, and Planning Technological Institute of Goal Machinery) showed that the most important structural factors influencing the strength of grp are revealed by microstructural analysis of polished sections. The authors studied: a) grp on structural analysis of polished sections. The authors studied: a) grp on the basis of glass fabric, furfurol resins, and binding agents of the type  $\mathbb{E}[\Phi-2]$  (BF-2); b) "CBAM" ("SVAM") grp on the basis of orientated or crossed

card 1/3

Application of Microstructural Analysis for Studying Glass-reinforced Plastics S/191/60/000/004/012/015 B016/B058

glass sheets with BF-2 as binding agent; c) orientated grp from VNIIPTUglemash, based on glass tow and polyester resin. The specimens were clamped between two metal plates, cut with a saw, smoothed with a rasp, and finally polished. Polished sections were studied under the metallographic microscope MUM-8M (MIM-8M). The authors describe the detection of the structural elements of grp: glass fiber, binding agent, lubricant, defects, and structure. The direction of the glass fibers and their diameter were determined next. The authors used two methods for determining the quantitative ratio of the main components of grp: a) the method of Razival' (linear method, which they consider to be time-consuming) and b) A. A. Glagolev's point method (Ref. 1), which is explained. They studied grp which were subjected to expanding loads. They proved thereby that under the action of such pressure a destruction sets in before the breaking point is reached. Cracks in fibers occur under relatively low pressure. At elevated pressures, grooves appear on the polished section due to split or crumbled fibers. The number of destroyed fibers increases steadily with increasing load. The authors did not observe any interruption of cohesion between fibers and binding agent (resin) in the range of pressures

Card 2/3

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 Application of Nicrostructural Analysis for Studying Glass-reinforced Plastics
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applied. Specimens that were elongated and compressed showed the fiber defects and cracks at the boundary of fiber and resin. The authors finally state that microstructural analysis is suitable for determining the type and mechanism of destruction of grp under the action of various factors. There are 24 figures, 1 table, and 2 Soviet references.

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S/653/61/000/000/016/051 1007/1207

15/5/10

AUTHORS:

Kogan, A.H., Guterman, V.M., and Koshina, M.M.

TITLE:

Microstructure analysis as one of the methods for studying the structure of glass-reinforced plastics

SOURCE:

Plastmassy v mashinostrojenii i priborostrojenii. Pervaya respublikanskaya nauchno-tekhnicheskaya konferentsiya po voprosam primeneniya plastmass v mashinostrojenii i priborostrojenii, Kiev, 1959. Kiev, Gostekhizdat, 1961, 192-205

TEXT: Detailed results are reported of investigations carried out by UNITPTUGLEMASH on glass-reinforced plastics in order to find structural characteristics that would permit improved sampling inspection of finished plastics products, the design of new types of such products and of technological processes for their production. Investigations on polished microsections by means of metallurgical

Card 1/2

S/653/61/000/000/016/051 1007/1207

Microstructure analysis...

microscopy, were conducted in the following direction: study of the basic structural elements of plastics, texture, mean fiber-diameter, and ratio between the basic structural components. In the research, two methods were applied: the linear method developed by Rasiwal and the point method devised by Glagolov. The microstructural analysis was also applied to study the action of tensile stresses and the effect of working pressure on structure. The results proved that microstructural analysis is a valuable tool in revealing the nature of failure of glass-reinforced plastics and may be used in the study of mechanism of failure under the action of loads, pressure, etc. There are 1 figure and 13 tables.

Card 2/2

GUTERMAN, V.A.; GARGER, L.Ye.; GAMOL'SKAZA, Z.L.; Prinirali temestive: ZULIMIAN, I.D.; TOMPIN, I.I.; KULMIANGON, V.I.; KISELEVA, V.S.; HIKHAYLOVSKAYA, S.S.; GRINEERG, A.Ye.; MARKIN, I.S.

Raising the wear resistance of equipment parts operating in a hydraulic abrasive medium. Ugol' 39 no.9:61-63 S '64. (133A 17:10)

1. Vsesoyuznyy nauchno-issledovateliskiy i projektno-tekhnologichoskiy institut ugolinogo mashinostroyeniya.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R000617630003-5"

出程:管辖部建工工厂自己共同

GAMOL'SKAYA, Z.M.; GUTERMAN, V.M.; KOTINA, M.M.

Increasing the wear resistance of hydraulic machinery parts. Metalloved. 1 term. obr. met. no.11:33-37 N '65.

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-tekhnolog:... cheskiy institut ugol'nogo mashinostroyeniya.

ACC NR: AP6036885

(A)

SOURCE CODE: UR/0122/66/000/011/0041/0043

AUTHOR: Camol'skaya, Z. M. (Engineer); Guterman, V. M. (Candidate of technical sciences)

ORG: none

TITIE: High wear resistance of case-hardened high chromium steels working in an abrasive hydraulic medium

SOURCE: Vestnik mashinostroyeniya, no. 11, 1966, 41-43

TOPIC TAGS: wear resistance, chromium steel, abrasive, case hardening

ABSTRACT: The article gives the results of an investigation of the wear resistance of case-hardened high chromium steels 3kh13, kh12M, and 9kh18. The chemical composition of these steels and of two high chromium cast irons is given in a table. The samples were subjected to carburization at 1050°C (samples of steel 9kh18 at 1070-1100°C) for a period of 10-15 hours in a solid charcoal carburizing agent consisting of 60 parts (by weight) of spent carburizing agent and 40 parts fresh carburizing agent, with the addition of 5% soda, as well as in a gaseous medium with the use of triethanolamine. The samples were then immediately quenched in oil from 950° and annealed at 160-180°C. The properties of the case are given in a table, and the microstructure is shown in a table. To evaluate the behavior of the materials under

Cord 1/2

· UDC: 669.141.31:669.15'26-1947:620.162

different conditions of hydraulic abrasion, tests were run by the following methods:

1) slot condensation—the samples were in the form of two concentric sleeves, of which
the outer sleeve was fixed and the inner sleeve rotating; a slurry of water and sand
the outer sleeve was fixed and the inner sleeve rotating; a slurry of cylindrical rods
flowed at a high rate between the sleeves; 2) samples in the flow of slurry; 3) samples in the

flowed at a high rate between the sleeves; 2, samples in the law of slurry; 3) samples in the were placed in a vertical tube perpendicular to the flow of slurry; 3) samples in the form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were plates and the periodic impact of a form of plates were placed in a special unit and subjected to the periodic impact of a form of plates were placed in a special unit and subjected to the peri

3 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

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ACC NR: AF6036885

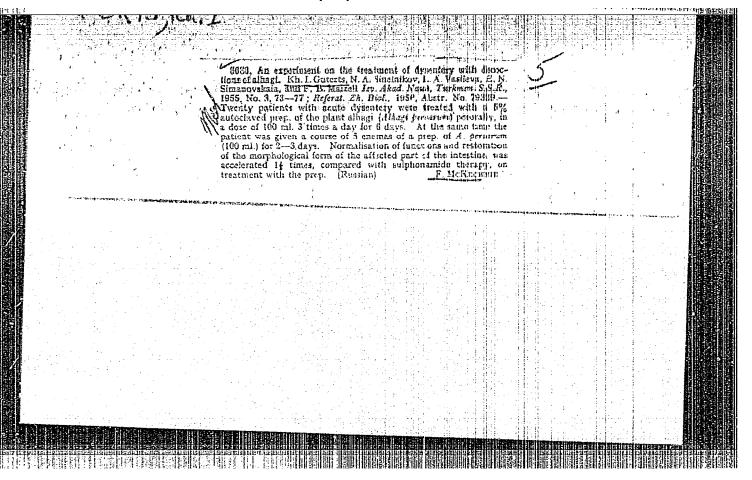
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- 2. USSR (600)
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- 7. Measures for preventing water leaks in steam boilers. Rab. energ. 2 No. 11, 1952

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

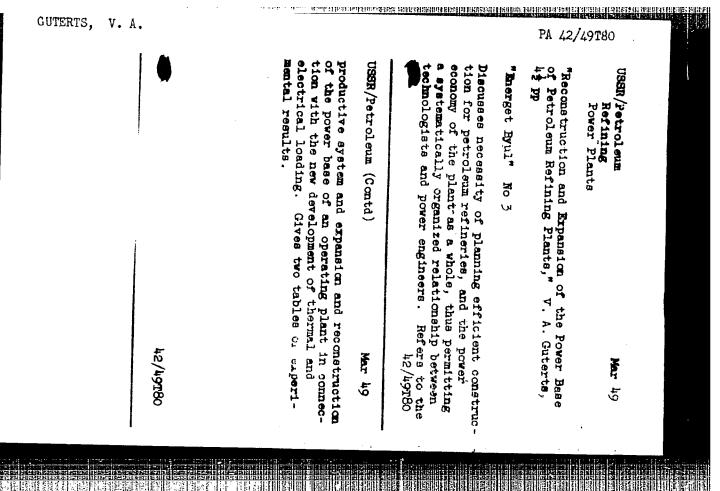
GHTERE Inc., Man., SVERDLIN, V.M., inch., SKVORTSOV, V.M., Load., Automotion of lead-carrying cablerays at the Tyeny-Aux Combine. Gor. zhur. no.9s48-50 S 164. /NCPA 17:12)

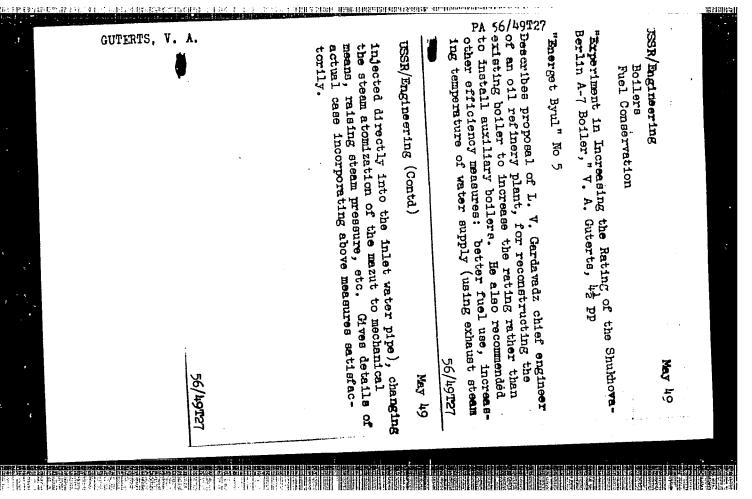
l. feningradskiy institut Proyektaviomatika.

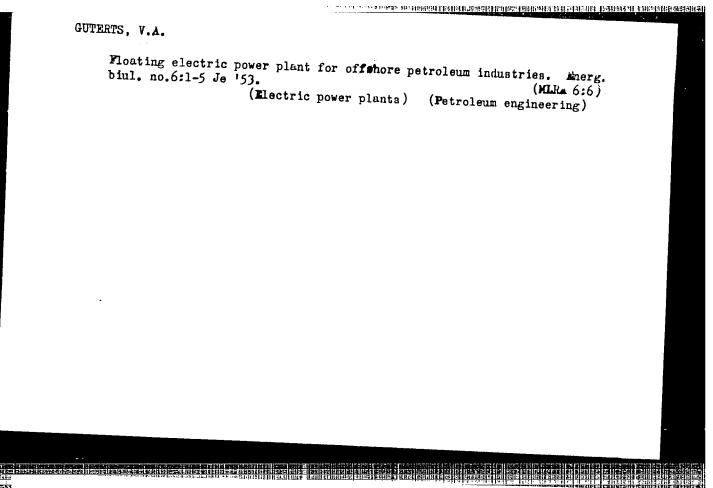


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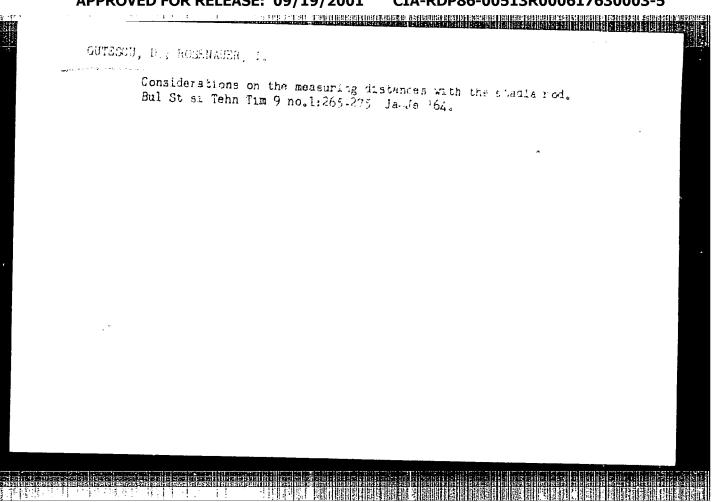






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Jan-June 56.

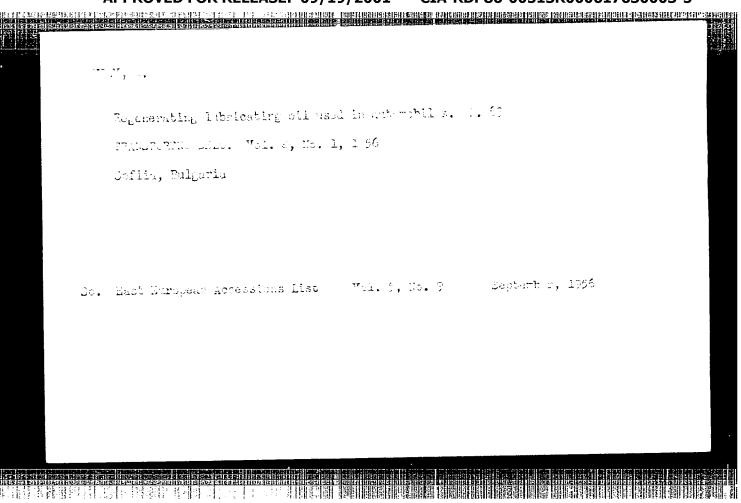
(LEAD POISONING, occup., in workers filling accumulators in electric plants (Ser))

(OCCUPATIONAL DISEASES, lead pois. in workers filling accumulators in electric plants (Ser))

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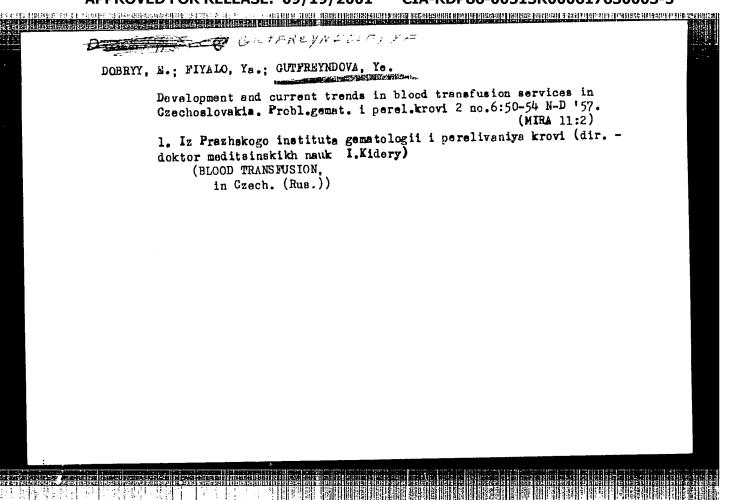
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6 no.12:703-707 Dec 58.

1. Ustav hematologie a krevni transfuse v Praze, reditel prof. MUDr. J.

Horejsi D Sc.

(BLOOD TRANSFUSION

in Czech. (Cz))

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Utilization of blood transfusion preparations during 1958.
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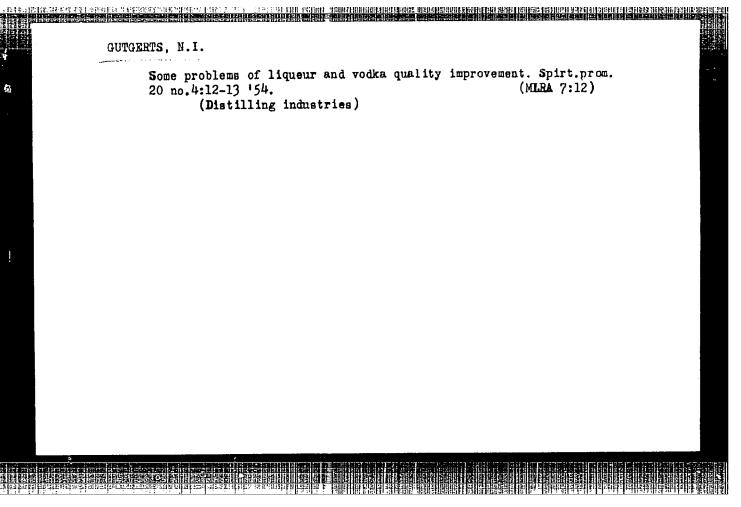
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We took part at the All-Union Conference of Inventors, Rationalizers, and Innovators.

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p. 38 (Prace. Contributions, Vol. 2, 1957, Praha, Czechoslovakia)

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GUTH V

PHASE I BOOK EXPLLITATION

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THE FIRST LEADING BEING BEING BEING BERNESELITHERE BEING BEING BEING BEING BEING BEING BEING BEING BEING BEING

Hvězdářská ročenka 1961. (Astronomical Yearbook for 1961) Prague, NČAV, 1960. 205 p. 3,800 copies printed. (Series: Československá akademie věd. Sekce matematicko-fysikální, ročnik 37)

Compilers: Jirí Bouška, Vladimír Guth and Pedrich Onderlička.

Sponsoring Agency: Československá akademie věd. Scientific Ed.: Josef M.Mohr, Professor, Doctor; Reviewer: Vladimír Vanýsek, Doctor; Ed. of Publishing House: Ladislay Hrdina.

PURPOSE: This book is intended for astronomers.

COVERAGE: The yearbook contains calendar data for the year 1961, ephemerides of the sun, moon, planets, stars, and other celestial bodies, and other information of interest to the astronomer. V. Guth composed parts A,B,D, and F; J. Bouška assisted in the composition of part D, and composed parts C and E; B. Onderlička wrote parts G and H; V. Ptáček compiled the list of monitored time signals, and L. Webrová the table of zonal times. The following collaborated as indicated on the composition of the chapter entitled "Review of Progress in Astronomy: J. Bouška (Section 5), M.Kopecky (Section 3), L. Kresák (Section 6),

Card 1/3-

P. Mayer (Section 4), J. Ruprecht (Sections 7 - 11), L. Sehnal (Section L. Webrová (Section 1). J. Bouška wrote the "Explanation of the Astrobook". There are no references.  TABLE OF CONTENTS:  Calendar Data  Ephemerides	ion 2), and onomical Year
Calendar Data	
Ephemerides	7
A. The sun B. The moon C. The planets and their satellites D. Eclipses and occultations E. Calendar of phenomena F. Planetoids, comets, and meteors G. Stars H. Variable stars	9 26 39 70 77 96 102 113
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L. 41519-65 ARG/EMO-2/EMG(j)/EMT(d)/FBJ/FSS-2/EMG(r)/EMT(1)/FBO/EMT(e)/EMT(r)/EMT(r)/FS(v)-3/EF(e)/EMG(k)-2/EMG(s)-2/EMG(e)/EMG(r)/EMG(

Althorsho  Ruml, Vladimir, (Candidate of Medical Sciences, Doctor); Sadil, Josef, (Doctor of Physiological Sciences); Schmal, Ladislav; Stwernk, Jirl, (Doctor); Svestka, Zdenck, (Doctor); Tuma, Jaroslav, (Candidate of Physical and Mathematical Sciences, Doctor); Tyml, Vaclav, (Docent); Undhia, Lyan, (Candidate of Technical Sciences, Professor, Doctor); Valnick, Borin, (Candidate of Physical and Mathematical Sciences, Doctor); Vanysck, Vladifi, (Candidate of Physical and Mathematical Sciences, Doctor); Vanysck, Vladifi, (Candidate of Physical and Nathematical Sciences, Doctor); Vlasak, Mirian, (Candidate of Physical and Nathematical Sciences; Doctor); Voda, Miloslav, (Englineer)  Principles of astronautics (Zaklady kosmonautiky) Prague, Orbis, 1964. 145 p. illus., biblio. 5000 copies printed.  TOPIC TAGS: cosmonautics, rocket, satellite, space flight, missile  PURPOSE AND COVERACE: This publication is a popular scientific reference book for people working in cosmonautics. The book presents a survey of cosmonautics and space flight up to 1 June 1963.  TABLE OF CONVENTS:	AMMONSTAL  Ruml, Vladimir, (Candidate of Medical Sciences, Doctor); Sadil, Josef, (Doctor of Physiological Sciences); Schnal, Ladichay; Stverak, Jiri, (Doctor); Sventka, Zdenck, (Doctor); Tuma, Jaroslav, (Candidate of Physical and Mathematical Sciences, Zodenck, (Doctor); Tuma, Jaroslav, (Candidate of Physical and Matheseciences, Professor, Doctor); Valnicek, Forig, (Candidate of Physical and Mathematical Sciences, Doctor); Vanysek, Vladimir, (Candidate of Physical and Mathematical Sciences, Doctor); Vlasak, Marian, (Candidate of Physical and Mathematical Sciences, Doctor); Vlasak, Marian, (Candidate of Physical and Mathematical Sciences, Doctor); Voda, Miloslav, (Engineer)  Principles of astronautics (Zaklady kosmonautiky) Prague, Orbis, 1964. hts p. illus., biblio. 5000 copies printed.  TOPIC TAGS: cosmonautics, rocket, satellite, space flight, missile in Componautics. The book presents a survey of cosmonautics and space flight up to 1 June 1963.  TABLE OF CONTENTS:	AMADEST AND COVERAGE: This publication is a popular scientific reference book for people working in commonautics. The book presents a survey of commonautics and space flight up to 1 June 1963.	199			
TABLE OF CONTENTS:	TABLE OF CONTENTS:	TABLE OF CONTENTS:		Altholisho  Ruml, Vladimir, (Gandidate of Medical Sciences, Doctor); Sadil, . Physiological Sciences); Schnal, Ladialay; Stwerck, Jiri, (Doctor)  Zdenck, (Doctor); Tuma, Jaronlay, (Candidate of Physical and Matt Doctor); Tysl, Vaclay, (Docent, Engineer); Wichla, Ivan, (Candidate of Physical Sciences, Doctor); Valnicek, Foris, (Candidate of Physical Sciences, Doctor); Vanysek, Vladimir, (Candidate of Physical Sciences, Docent, Doctor); Vlasak, Marian, (Candidate of Mathematical Sciences; Doctor); Voda, Miloslay, (Engineer)  Principles of astronautics (Zaklady kosmonautiky) Prague, Orbis, 15 biblio. 5000 copies printed.	Josef, (Doctor of r); Sventka, hematical Sciences, ate of Technical sical and Matherical and Mat	
Card 2/8	Card 2/8	Card 2/8		space flight up to 1 June 1903.		,
				Card 2/8		· 

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Fifteenth Congress of the International Astronautical Federation,
Warsaw, September 7-12, 1964. Cs cas rys 15 no.1:43-44. '05.

1. Astronomical Institute of the Czechoslovak Academy of
Sciences Ondrejov. Submitted October 12, 1964.

त । ए. . . ताल मानारामक मन्त्रातामरङ्गाल अक्षर मानाप्तराहर प्रित्ताम विकास विभागत विभागत विभागत । ताल प्राप्त

GUTHERC, B.

Organization and method of building steam-power plants in the Soviet Union.

p. 2 (Budownictwo Przemyslowe) Vol. 4, No. 11, Nov. 1955, Warszawa, Poland

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EFAI) LC, VOL. 7, NO. 1, JAN. 1958

GUTHERC, B.

GUTHERC, B. The organization and methods of construction of steam-power plants in the USSR. p. 2. BUDGWNICTWO PRZEMYSLOWE. Warszawa, Poland. Vol. 4, No. 11, Nov. 1955

SOURCE: East European Accessions List (EFAL) LC Vol. 5, No. 6, June 1956

GUTHERC, B.

GUTHERC, B. Organization and methods of construction of thermoelectric power plants in the USSR. P. 284.

Vol. 9, No. 6, Nov./Dec. 1955 ENERGETYKA TECHNOLOGY Warszawa, Poland

So: East Europeon A ccession, Vol. 5, No. 5, May 1956

CUTHLRO, F.

CUTHIRE, E. Achievements in Polish power-engineering investments during the last decade. p. 421.

Vol. 31, No. 7, July 1955 FREGLAD LIEKTRCTECHRICZNY TECHNOLOGY Poland

So: East Europeon Accession, Vol. 5, No. 5, May 1956

P/021/60/000/010/001/006 A105/A026

AUTHOR:

Gutherc, Borys, Master of Engineering

TITLE:

Technical Progress in Electric Power Engineering

PERIODICAL:

Przegląd Elektrotechniczny, 1960, No. 10, pp. 392 - 394

TEXT: The article deals with the development of thermal power plants since 1945. From 1945 to 1955, 80% of the increased power production was obtained by 25 - 55Mw turbine plants, 40% of which were 50 - 55 Mw turbine plants. Coal supply and ash removal were mechanized and high-speed reactors were installed for water precipitation. In 1950, the first heat generating power plant was built at Zerania the second one in Łódź produces steam for textile plants. The number of power plants producing more than 100 Mw increased from 4 in 1949 to 8 in 1955. Among them a 300 Mw power plant in Jaworzno II, and a 220 Mw in Miechowice were built. The average power produced by turbogenerators in 1950/55 was 27 Mw compared to 8.1 Mw in 1949. The own power consumption of the plants increased from 6.24% to 7.68%. The first heat supply for cities and plants started in 1950 by the 240 Mw, 720 gcal/h Heat Supply Plant in Zeranie. The average power of 27 Mw of heat supply plants built in 1950 - 1955 increased to 54 Mw of plants built from 1956 to 1960.

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Technical Progress in Electric Power Engineering

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The capacity of the Blacjownia Power Plant was increased to 70 Mw, 530/525°C and that of the Pomorzany Power Plant to 60 Mw, 525/525°C by coupling of the generators with reheated steam. The operating costs per 1 Mw were reduced by 10% in the recently completed Skawina and Konin II Power Plants, the coal consumption from 578 g/kwh in 1955 to 496 g/kwh in 1959, and the labor index from 6.5 Mw in 1955 to 3.6 Mw in 1960. The Five-Year Plan 1961 - 1965 provides for the construction of a 1,400 Mw lignite power plant in Turon equipped with 7 Soviet 200 Mw, 130 atm, 535/535°C turbogenerators; a 500 Mw lignite power plant in Adamov; and 700 Mw power plants in Siercza II and Lagisza. The capacity of the Konin Power Plant will be increased to 590 Mw. The Five-Year Plan 1966 - 1970 provides for the production of 20 turbogenerators of 200 Mw each. The steam temperature in power plants will be increased to 565°C (1,050°F). Pipelines, reheaters and turbines will be made of austenite steel in spite of the fact that Soviet power plants increased the steam temperature to 580/565°C using ferrite steel.

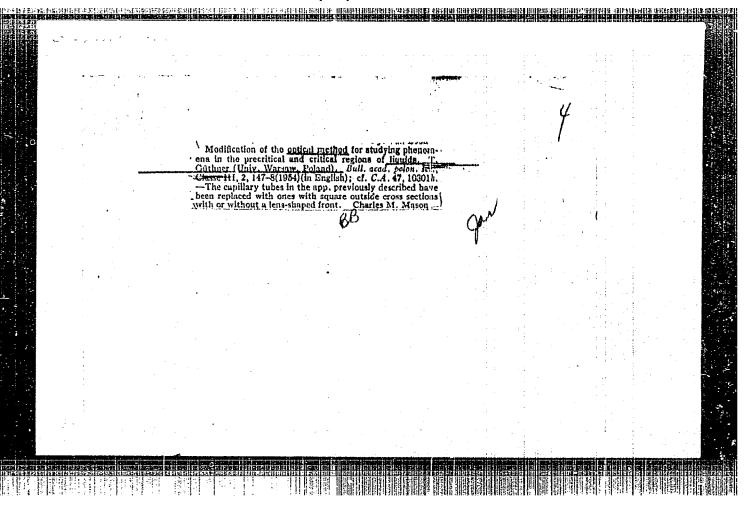
Card 2/2

自自接基件推销自由中国 经增加的金额利用 电流

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The GOERLO plan and its importance for the development of Soviet power engineering. Energetyka Pol 16 no.10:292-295 0 '62.

1. Dyrektor Departmentu Energetyki, Ministerstwo Gornictwa i Energetyki, Warszawa.



### "APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R000617630003-5 THE RESIDENCE OF THE PROPERTY OF THE PROPERTY

GUTIDZE, P. A., Candidate Tech Sci (diss) -- "The dynamic computation of foundations under turbogenerators in a linear direction". Tbilisi, 1959. 21 pp (Min Higher Educ USSR, Order of Labor Red Banner Georgan Polytech Inst im S. M. Kirov), 200 copies (KL, No 25, 1959, 133)

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Study of the causes of vibration in the engine building of a hydroelectric power station. Gidr.stroi. 31 no.5:7-11 My '61. (MIRA 14:6)

(Hydroelectric power stations) (Vibration)

S/169/63/000/002/054/127 D263/D307

AUTHOR:

Gutidze, P. A.

TITLE:

Calculation of inertial seismic forces acting on con-

crete buttressed dams with massive crossheads

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 19, abstract 2G128 (Izv. Tbilissk. n.-i. in-ta sooruzh. i

gidroenerg., 1962, 14 (48), 138-146)

TEXT: A method is described for the determination of seismic forces acting on concrete buttressed dams. The problem of the natural oscillations of the construction is solved. Constructional and kinematic\_properties show that the calculation should allow for both transverse and longitudinal forces acting on the dam. When the buttresses are applied transversely to the dam, the calculation of the frequencies and the form of the oscillations should be carried cut by considering the oscillations of the standing buttress separately. It may be represented as a wedge which is elastically or rigidly fixed to the base. Calculations of the natural oscillations

Card 1/2 -